

# Comparison of Voice Parameters Between Classically Trained and Untrained Females (no. 69)

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Voice education and training of special voice skills is the basis for an effective voice management of prospective professional voice users. Voice range profile (VRP) and acoustic parameterization of voice samples is widely used in vocology research. VRP's contour comparison shows differences between trained and untrained subjects and is very good indicator for voice disorders. The average values of acoustical parameters of the voice samples correlate with perceptual features and are used as predictors of voice quality. However, most of acoustical parameters (mainly spectral parameters) depend on the pitch and intensity of voice, so the interpretation of acoustical parameter measurement should include the position in VRP. The aim of this study was to compare the vocally trained (in classical singing) and untrained group of females and to study the relationships among perceptual, acoustical properties and electroglottographically derived closed quotient.

For purposes of study were made recordings of habitual reading, the song singing and voice range profile examination by scale singing in 7 classically singing trained and 8 untrained female students of Pedagogical faculty.

Perceptual assessment of voice quality, resonance and timbre (bright - dark) were made by mean of visual ranking and rating method by 2 listeners.

Comparison of acoustical data and correlation with perceptual results were made in average data and considering the pitch and position in VRP.

The perceptually dominant differences between trained and untrained group was in the perception of voice resonance.

The comparison of speech range profiles did not show any differences, but VRP's contours revealed significantly higher intensities in the higher half of the vocal range for trained females. The VRP normalization to average pitch and intensity of habitual voice showed that differences were only trends. VRPs of song singing find out the difference in intensities above C5. The VRP's contour correlation with the perception of resonance commonly shows increasing of intensity for both habitual and singing voice.

The comparison of CQEGG considered the pitch or the position in the VRP shows the main difference in habitual voice - lower values for trained females and negative correlation with resonance perception. Comparison of CQEGG in VRP reveals the main difference in singing, that untrained females sung the higher tones in the lowest intensity without glottis closure and with higher perturbations.

The method for evaluation of acoustical parameters considering their location in the voice range profile seems to be a useful tool for distinguishing the different vocal groups as well as for objective interpretation of perceived voice quality properties.

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